



REGULATION OF BREASTFEEDING PATTERNS BY POSTNATAL MOTHERS

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ABSTRACT

Maternal attitudes toward breastfeeding have impact on when they commence and how long they practice breastfeeding. This study examined how postnatal mothers regulate their breastfeeding patterns. Convenient sampling method was used to select 299 postnatal mothers who visited infant welfare clinics along with their infants in two primary, two secondary and two tertiary health care institutions. Three research questions and one null hypothesis guided the study. Questionnaire on Breastfeeding Patterns of Postnatal Mothers (QPBF) and Checklist on the Health status of infants with varied Breastfeeding Patterns (CHSIVBP) were used for data collection in the study. Frequency distribution and percentages were used to answer the research questions, while chi-square test was used in testing the null hypothesis at 0.05 level of significance. The result indicated variations in the time of commencement of breastfeeding by the postnatal mothers with majority initiating breastfeeding on the day of delivery; some commenced partial breastfeeding within the first month. The result also revealed that the patterns of breastfeeding adopted by the mothers significantly influence the health status of their infants across the three levels of health care institutions.

KEYWORDS: Breastfeeding patterns, infants Health Status, Postnatal mothers, Regulation.

INTRODUCTION

Breast milk is nature's most precious gift to the newborn, an equivalent of which is yet to be innovated by the scientific community despite tremendous advances in science and technology.^[1] Scientific research studies have clearly proved that breastfeeding provides the most suitable nutrition for infants and protects them against infections, allergies and asthma.^[2] Other documented benefits of breastfeeding to the mother include emotional wellbeing, economic benefits, spacing of pregnancies, protection against breast cancer and reduced incidence of Type 1 diabetes mellitus.^[3,2]

In the context of Millennium Development Goal 4, scientific evidences have highlighted initiation of breastfeeding immediately after birth without squeezing out colostrum and exclusive breastfeeding for the first six months as the key to tackle infant nutrition and also survival of infants.^[4] Studies on accelerating child survival published in the Breastfeeding promotion Network of India (BPN) Lancet clearly established that universalization of early initiation of breastfeeding within half an hour after birth has tremendous potential in reducing 31% of neonatal deaths which is about 10% of total child deaths.^[5] Early introduction of

supplementary feeding usually has a negative effect on the return to exclusive breastfeeding.^[2] Researchers have observed that supplements may not be given daily but they are unlikely to be withdrawn once they are introduced.^[6] Supplemental feeding exposes infants to foreign contaminants and infection at a very vulnerable stage of life.^[7] This may likely explain the higher infant mortality rate of partially bottle-fed infants compared with exclusively breastfed infants.^[8]

Researchers have shown that exclusive breastfeeding is associated with increased weight gain among babies of normal birth weight.^[9] Despite this observed benefit, studies have also shown that early introduction of infant formula and other foods have remained a problem among postnatal mothers.^[10] Hence this study intends to determine how postnatal mothers regulate their breastfeeding patterns.

Research Questions

- At what time after child birth do postnatal mothers commence breastfeeding?
- At what age of the infants do postnatal mothers commence partial breastfeeding for their infants?
- What additional foods do the postnatal mothers who are breastfeeding give their infants?

Hypothesis

Patterns of breastfeeding adopted by postnatal mothers do not significantly influence the health status of their infants across the levels of Health Care institutions.

MATERIALS AND METHODS

Design and sampling

This study was a cross-sectional research design. A convenient sample of 299 postnatal mothers who visited infant Welfare clinics along with their infants in three levels of Health care institutions (two Health centres, two General Hospitals and two Teaching Hospitals) were used for the study. Ethical approval was obtained for the study and informed consent was obtained from the mothers.

Inclusion criteria for the study were all healthy postnatal mothers irrespective of parity who were breastfeeding their infants, and all infants born at term aged 0-12 months who were breastfed irrespective of the pattern of breastfeeding. Exclusion criteria were preterm babies and babies with any other underlying disorder (organic and non-organic) and mothers with medical disorders that could interfere with breastfeeding. Also mothers who indicated not to participate were excluded from the study, and also their infants were not used. The mothers were approached by the researcher at the time of their visits to the infant welfare clinics along with their infants. Interview method was adopted by the researcher to obtain data from the respondents at that time as well. Confidentiality was ensured by not including names of the respondents in data collection.

Instrument

Two instruments (Questionnaire and Checklist) were used among the mother-infant pair for data collection. Questionnaire on Patterns of Breastfeeding by Postnatal Mothers (QPBF) was used to obtain data on the characteristics of the postnatal mothers. Section A of the instrument elicited information on the demographic characteristics of the respondents (eg age, marital status, educational level, parity and employment status, etc). Section B of the questionnaire elicited information on the breastfeeding patterns adopted by the postnatal mothers (eg time of commencement of breastfeeding, duration of exclusive breastfeeding, time of commencement of partial breastfeeding, frequency of Breastfeeding, additional feeds with Breastfeeding, etc). The responses to section B of the QPBF were scored on a 4-point scale ranging from I point for poor pattern of breastfeeding, 2 points for fair pattern of breastfeeding, 3 points for good pattern of breastfeeding, and 4 points for normal/ideal breastfeeding pattern.

Checklist on the Health Status of infants with varied breastfeeding patterns (CHSIVBP) was developed for the study by the researcher to obtain information on the responses of the infants to the breastfeeding patterns adopted by their mothers. These data were obtained confidentially from the medical records of the infants,

and included the infants birth weight, age, weight-gain patterns, height, nutritional status, vulnerability to infection, etc.

The instruments (QPBF) and CHSIVBP) were tested for reliability, and a test-retest reliability coefficient of 0.72 and 0.75 respectively were obtained over a one month interval.

Data Analysis

Standard descriptive statistics of means and standard deviation were used to summarize the variables. Frequencies and percentages were used to answer the research questions while chi-square test was adopted in testing the null hypothesis at 0.05 level of significance. SPSS version 21 was used for the data analysis.

Table 1: Descriptive statistics of the measured variables.

	N	Mean	Std. Deviation
Age of Mother	297	27.5926	5.81171
Level of health institution	299	1.9967	.81717
Level of Health institution 2	299	1.9967	.81717
MS	299	1.0301	.17115
Edu	299	3.3344	.60909
Parity	299	1.5886	.49291
Employment Status	299	1.3746	.48483
Family Type	299	1.0100	.09983
Religion	299	1.0100	.09983
Place of Residence	299	1.3378	.47375
Time of Commencing Breastfeeding	281	3.7331	.70958
EBF Duration	197	2.6447	1.17179
Commencement of Partial BF	241	2.0415	1.26423
Breastfeeding Frequency	296	3.6892	.71641
Breast Sucking Duration	299	3.0602	.94641
Additional Food	230	2.7522	1.44003
Breastfeeding Pattern	299	2.6210	.70112
Sex of Infant	299	1.5619	.49699
Birth Weight	296	3.3274	.49365
Present Weight	89	5.3719	2.14391
Weight Gain Pattern	288	1.0556	.22946
Height Pattern	298	1.0470	.22728
Nutritional Status	299	1.0635	.24435
General Body System	299	1.1271	.36255
Vulnerability of the Infant to infection	299	1.1204	.32598
Thriving of Infant	299	1.0870	.28224
Health Status	299	1.0797	.24013

Table 1 shows the descriptive statistics of the measured variables. The mean age of the postnatal mothers was 27.5926 with standard deviation (SD) of 5.81171, mean for the levels of health care institutions 1.9967 with SD of 0.81717; for marital status (MS) of the mothers, the mean was 1.0301 with SD of 0.17115, mean for educational level of the mothers 3.3344 with SD 0.60909, mean for parity of the mothers was 1.5886 with SD of 0.49291; mean for employment status of the

mothers was 1.3746 with SD of 0.48483. Family type of the mothers had mean score of 1.0100 with SD of 0.09983; religion had mean score of 1.0100 with SD of 0.09983; place of residence of the mothers had mean of 1.3378 with SD 0.47375. For time of commencement of breastfeeding the mean was 3.7331 with SD 0.70958; mean for exclusive breastfeeding (EBF) duration was 2.6447 with SD 1.17179; mean for time of commencement of partial BF was 2.0415 with SD of 1.26423; breastfeeding frequency had mean of 3.6892 with SD of 0.71641; breast suckling duration had mean of 3.0602 with SD 0.94641; mean for additional food was 2.7522 with SD 1.44003; for breastfeeding patterns the mean was 2.6210 with SD 0.70112; mean for sex of

the infants was 1.5619 with SD of 0.49699; birth weight of the infants had mean of 3.3274 with SD of 0.49365; mean of the present weights of the infants at time of data collection was 5.3719 with SD of 2.14391. Weight-gain pattern of the infants had mean of 1.0556 with SD of 0.22946; mean height for the infants was 1.0470 with SD 0.22728; mean for the infants nutritional status 1.0635 with SD 0.24435; for infants' general body system the mean was 1.1271 with SD of 0.36255. For vulnerability of the infants to infection, the mean was 1.1204 with SD 0.32598; mean for thriving of the infants was 1.0870 with SD of 0.28224 while the health status of the infants had mean of 1.0797 with SD of 0.24013.

Table 2: Time of commencement of Breastfeeding by the postnatal mothers after childbirth.

Variable	Time of commencing Breastfeeding	Frequency	Percent	Valid percent
Commencement of Breastfeeding	Later than first wk after birth	12	4.0	4.3
	First wk after birth	7	2.3	2.5
	A day after birth	25	8.4	8.9
	Day of birth	237	79.3	84.3
	Total	281	94.0	100.0
	Missing System	18	6.0	
	Total	299	100.0	

Table 2 shows that out of 281 postnatal mothers, 12(4.3 valid %) commenced breastfeeding later than the first week after childbirth, 7(2.5 valid %) commenced breastfeeding in the first week after childbirth, 25(8.9 valid %) commenced a day after childbirth, while 237(84.3 valid %) commenced on the day of childbirth.

Table 3: Age of the infant at which postnatal mothers commenced partial breastfeeding.

Variable	Infant age at Commencement of partial breastfeeding	Frequency	%	Valid %
Partial Breastfeeding	One month	133	44.5	55.2
	Two months	19	6.4	7.9
	Three months	35	11.7	14.5
	4-6 months	54	18.1	22.4
	Total	241	80.6	100.0
	Missing System	58	19.4	
	Total	299	100.0	

Table 3 Shows that out of 241 postnatal mothers, 133(55.2 valid %) commenced partial breastfeeding when their infants were one month old, 19 (7.9 valid %) commenced partial breastfeeding at two months age of

their infants, 35(14.5 valid %) commenced partial breastfeeding when their infants were three months old while 54 (22.4 valid %) commenced partial breastfeeding when their infants were between four and six months old.

Table 4: Additional foods given to the infants who are breastfed by their postnatal mothers.

Variable	Additional Foods	N	%	Valid %
Partial Breastfeeding	Water	91	30.4	39.6
	Tea/juice	14	4.7	6.1
	Commercial Formula, Pap and other foods	125	41.8	54.3
	Total	230	76.9	100.0
	Missing system	69	23.1	
	Total	299	100.0	

Table 4. Shows that in addition to breastfeeding, 91 (39.6 valid %) mothers gave their infants water to drink, 14 (6.1 valid %) gave their infants tea or juice to drink, and 125 (54.3 valid %) mothers fed their infants with commercial formula, pap and other family food like soup, etc.

Table 5: Chi-square test comparison of the influence of breastfeeding patterns of postnatal mothers on the health status of their infants across the levels of Health Care institutions.

Variables	Levels of Health Institution	N	Mean Rank	df	X ² -cal	p-value	Level of significance
Breastfeeding Patterns /Infant Health status	Primary Health Institution	100	156.33	2	7.884	0.019	0.05
	Secondary Health Institution	100					
	Tertiary Health institution	99	136.72				
	Total	299					

Table 5 shows that at 0.05 level of significance, the calculated X^2 of 7.884 was more than the p-value of 0.019. The null hypothesis is rejected. Patterns of breastfeeding adopted by postnatal mothers significantly influence the health status of their infants across the primary, secondary and tertiary health institutions.

DISCUSSION

Findings from the study indicate that majority 237 (84.3 valid %) of the postnatal mothers commenced breastfeeding on the day of birth whereas 25 (8.9 % valid) commenced a day after birth and the remaining commenced breastfeeding during the first week and after the first week of birth respectfully (table 2). Experts have warned that optimal infant breastfeeding should be initiated within the first hour of birth.^[11] Delayed initiation of breastfeeding is related to physical condition of the mother after delivery (whereby some mothers claim that they are not feeling well enough to be able to breastfeed), painful conditions associated with caesarean section, and the absence of their infants who were kept in the nursery.^[12] Studies have shown how cultural influences determine timing of breastfeeding initiation as the postnatal mothers wait for their sisters-in-law to come and clean the breasts with grass soaked in raw cow's milk and assist to initiate the breastfeeding.^[13] It has also been found that low rates of breastfeeding initiation and early cessation of breastfeeding are prevalent in many industrialized countries;^[14] and that long term breastfeeding depends on EBF initiation in early post-partum.^[15]

Findings from the study indicate that majority of Postnatal mothers (55.2 valid %) commenced partial breastfeeding as early as when the infant was one month old (table 3). This practice is contrary to WHO guideline that appropriate complementary feeding should commence after the sixth (6th) month of life in the infant.^[4] It is important to note that the infant's gastrointestinal tract needs to be given time to develop and mature in readiness to cope with the handling of other food due to immaturity of the GIT, renal system as well as the neurophysiological status of the infant.^[16,17] WHO cautioned that early introduction of supplementary feeding usually has a negative effect on the return to exclusive breastfeeding.^[2] Researchers have observed that supplements may not be given daily but they are unlikely to be withdrawn once they are introduced.^[6] Experts have also cautioned that supplemental feeding exposes infants to foreign contaminants and infection at a very vulnerable stage of life.^[7]

Types of other foods which the postnatal mothers fed their infants with alongside breastfeeding included water, tea/juice, commercial formula, pap, soup and other family foods (table 4). These observations are similar to the findings in other studies. It has been found that water was the most popular supplement given to infants by their postnatal mothers, and that other foods include commercial formulas, bush teas and juice, and that some

mothers introduce supplementary feed on the day of birth.^[18] Reasons for introducing supplements like water were because the babies were too hot at birth, to wash the baby's tongue, and to quench thirst in the baby at birth.^[18] Also other reasons given by the mothers for early introduction of other feeds were that the breast was not producing milk and that breast milk alone will not satisfy the baby's hunger.^[18]

Findings from the study also indicate that the patterns of breastfeeding adopted by the postnatal mothers significantly influence the health status of their infants across the primary, secondary and tertiary health institutions ($X^2=7.884$; p-value 0.019) (table 5). Health system practices have been found to be among the factors that influence breastfeeding practices in different areas of developing countries.^[19,20] Hospital participation in the Baby Friendly Hospital Initiative (BFHI) increase rates of breastfeeding initiation, duration and exclusivity.^[21] Clinicians may also positively or negatively influence maternal breastfeeding behavior by either encouraging mothers on use of formula or by making mothers aware of the benefits of breastfeeding.^[18]

CONCLUSIONS

This study indicates that time of initiation and cessation of breastfeeding varies among postnatal mothers. Majority of the mothers commence partial breastfeeding too early for the age of the infant. Also the result indicates that patterns of breastfeeding adopted by the postnatal mothers significantly influence the health status of their infants across all the levels of health care institutions.

REFERENCES

1. Faridi, MMM. Health Care System in the protection, Promotion and support of Breastfeeding. Solution Exchange for MCH community Newsletter, Breastfeeding Month Special, 2008; 7-8.
2. WHO. Global strategy for infant and young child feeding; the optimal duration of exclusive breastfeeding. Fifty-fourth World Health Assembly, Provisional Agenda item 13.1.A54/INF. DOC./4. Month Special, 2008; 7-8.
3. Sadauskaite -Kuehne V, Ludvigsson J, Padaiga Z, Jasinskiene E, Samuelsson U. Longer breastfeeding is an independent protective factor against development of Type I Diabetes Mellitus in childhood. *Diabetes Metab Res Rev.*, 2004; 150-157.
4. WHO. Global strategy for infant and young child feeding; the optimal duration of exclusive breastfeeding. Fifty-fourth World Health Assembly, Provisional Agenda item, 13.1. A54/INF. DOC./4. 2001.
5. Gupta A. Faulty feeding practices and malnutrition. Breastfeeding Promotion Network of India. Available from

- URL:<http://www.bpni.org/egi/wbw2006asp>. 2007; Viewed on 2 December 2006.
6. Piwoz EG, Black RE, Lopez de Romana G, Creed de Kanasiario M, Brown KH. The relationship between infants preceeding appetite, illness and growth performance and mothers' subsequent feeding practice decisions. *Social Science Medicin*, 1994; 39: 851-860.
 7. Wilmoth TA, Elder JP. (An assessment of research on breastfeeding promotion strategies in developing countries. *Social Science Medicine*, 1995; 41: 579-594.
 8. Brown KH, Dewey KG, Allen LH. Complementary feeding of young children in developing countries: a review of current scientific knowledge, 1998; Geneva: WHO.
 9. Scarlett D, Cargill M, Lyn-Sue J, Richardson S, McCaw-Binns A. Breastfeeding prevalence among six-week old infants at the University Hospital of West indies, *West Indian Medical Journal*, 1996; 45: 14-17.
 10. Almroth S, Latham MC. Breastfeeding practices in rural, Jamaica. *Journal of Tropical Pediatrics*, 1982; 28: 103-109.
 11. UNICEF. Tracking progress on child and maternal malnutrition: a survival and development priority, 2009.
 12. Chien L, Tai C. Effect of delivery method and timing of breastfeeding initiation on breastfeeding outcomes in Taiwan. *Birth*, 2006; 34(2): 123-130.
 13. Subbian N, Jeganathan A. (Socio-cultural Beliefs influencing breastfeeding practices among primi postnatal mothers residing in urban Slum area of Delhi. *Health and Population Perspectives and Issues*, 2012; 35(2): 61-73.
 14. Zanardo V, Canella A, Maone R, Straface G. Bonding and breastfeeding after a cesarean delivery. *Early Human Development*, 2013; 89:54.
 15. Holmberg KS, Peterson UM, Oscarsson MG. A two-decade perspective on mothers' experiences and feelings related to breastfeeding initiation in Sweden. *Sex Reproductive Health*, 2014; 5: 125-130.
 16. Reeder SJ, Mastroianni L, Martin LL. *Maternity Nursing* (14th ed.). Philadelphia: J.B. Lippincott Company: 1980.
 17. Dratva J, Merten S, Ackermann-Liebrich U. The timing of complementary feeding of infants in Switzerland: compliance with the Swis and the WHO guidelines. *Acta Prediatrica*, 2006; 95(7): 818-825.
 18. Kurzewski K, Gardner JM. Breastfeeding patterns among six-week-old-term infants at the University Hospital of the West Indies. *West Indian Medical Journal*, 2005; 54(1): 28-33.
 19. Nkala TE, Msuya SE. Prevalence and Predictors of exclusive breastfeeding among women in Kigoma region, Western Tanzania: a community based cross-sectional study. *International Breastfeeding Journal*, 2011; 6: article 17.
 20. Thurman SE, Allen PJ. Integrating lactation consultants into primary health care services: are lactation consultants affecting breastfeeding success? *Pediatric Nursing*, 2008; 34(5): 419-425.
 21. Philipp BL, Merewood A. The Baby-Friendly way: the best breastfeeding start. *Pediatr clin N Am*, 2004; 51(3): 761-783.